

ABSTRACT OF THE DISCLOSURE

An arrayed waveguide element having flat optical frequency characteristics, and an optical communication system using such  
5 arrayed waveguide element are realized by providing the arrayed waveguide element that is prepared by forming an inputting channel waveguide as well as an outputting channel waveguide, a channel waveguide array, a first sector form slab waveguide for connecting the inputting channel waveguide with the channel waveguide array,  
10 and a second sector form slab waveguide for connecting the outputting channel waveguide with the channel waveguide array on a substrate. A waveguide part wherein the outputting channel waveguide is connected with the second sector form slab waveguide is defined in a parabolic configuration, whereby flat optical frequency  
15 characteristics are realized. Furthermore, it is possible that an individual parabolic configuration is adjusted in response to a wavelength, so that it can cope with a trend of broad band in optical signals.